

REMARKS

This responds to the Office Action mailed on February 19, 2009.

Claims 1, 5, 11 and 31 are amended. Claims 1-9, 11-19 and 31 are now pending in this application.

§ 103 Rejection of the Claims

Claims 1 and 2 were rejected under 35 U.S.C. § 103(a) as being obvious over Boos et al. (U.S. 5,364,816) in view of Carpenter (U.S. 5,183,684). This rejection is respectfully traversed. Independent claim 1 has been amended to recite that the AlN passivation layer is applied at a temperature less than approximately 300 degrees Celsius, consistent with allowed claim 17.

The SiN passivation layer 62 of Boos et al., helps to control surface potential at .+ doped InGaAs cap layer 30, and prevents additional chemical reactions in layer 30 due to subsequent processing. There is no teaching that it operates as claimed to reduce uncontrolled changing of charge states in a transistor. To inherently teach the claimed function of reducing uncontrolled changing of charge states in a transistor, this result should necessarily flow from the structure described in the prior art. That is simply not the case. Boos et al., in the language that was cited in the Office Action, appears to perform different functions. Further, the SiN passivation layer 62 of Boos et al., is at least partially removed in further processing steps as shown in FIGs. 15-17 before any resulting transistor is actually operating. This tends to indicate that the layer 62 does not operate to provide the claimed function, and at a minimum, such claimed function is not inherent in the structure described in Boos et al.

Carpenter describes the formation of an aluminum nitride-containing ceramic layer. Such a layer is formed at a temperature of at least 400C. Col. 3, lines 1-9. The citation in the Office Action to Col. 2, lines 3-9 refers to a prior art desire to use AlN for passivation. Such use is referred to as “an attractive prospective material for use in microelectronic packaging...” Thus, there is no teaching of how to form an AlN layer, and the combination thus does not result in an AlN passivation layer with the characteristics claimed. It is respectfully requested that the rejection be withdrawn.

Claims 3 and 4 were rejected under 35 U.S.C. § 103(a) as being obvious over Boos et al. (U.S. 5,364,816) and Carpenter (U.S. 5,183,684) as applied to claims 1 and 2 above, and further in view of Parmenter et al. (U.S. 5,026,454). These claims are believed allowable as they depend from a claim that is believed allowable.

Claims 5 and 9 were rejected under 35 U.S.C. § 103(a) as being obvious over Boos et al. (U.S. 5,364,816) in view of Carpenter (U.S. 5,183,684) and Yoshida (U.S. 6,281,099). Independent claim 5 has been amended to recite that the AlN passivation layer is applied at a temperature less than approximately 300 degrees Celsius, consistent with allowed claim 17.

Claims 6-8 were rejected under 35 U.S.C. § 103(a) as being obvious over Boos et al. (U.S. 5,364,816) in view of Carpenter (U.S. 5,183,684) Yoshida (U.S. 6,281,099) as applied to claims 5 and 9 above, and further in view of Parmenter (U.S. 5,026,454). These claims are believed allowable as they depend from a claim that is believed allowable.

Claims 11-15 were rejected under 35 U.S.C. § 103(a) as being obvious over Utumi in view of Parmenter (U.S. 5,026,454) and Yoshida (U.S. 6,281,099). Independent claim 11 has been amended to recite that the AlN passivation layer is applied at a temperature less than approximately 300 degrees Celsius, consistent with allowed claim 17.

Allowable Subject Matter

Claims 16 was objected to as being dependent upon a rejected base claim, but were indicated to be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims. It is now believed to depend from a claim believed allowable.

Claims 17-19 are allowed.

CONCLUSION

Applicant respectfully submits that the claims are in condition for allowance, and notification to that effect is earnestly requested. The Examiner is invited to telephone Applicant's representative at (612) 373-6905 to facilitate prosecution of this application.

If necessary, please charge any additional fees or deficiencies, or credit any overpayments to Deposit Account No. 19-0743.

Respectfully submitted,

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Date May 19, 2009

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CERTIFICATE UNDER 37 CFR 1.8: The undersigned hereby certifies that this correspondence is being filed using the USPTO's electronic filing system EFS-Web, and is addressed to: Mail Stop Amendment, Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450 on this 19th day of May, 2009.

Name

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Signature

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